

**AMENDMENTS TO THE CLAIMS**

This listing will replace all prior versions,  
and listings, of claims in the application:

5 **Listing of Claims:**

1. - 129. (cancelled).

130. (withdrawn) A method for the assessment of at  
least one parameter of particles in a liquid analyte  
10 material, comprising

15 providing a device comprising a sample  
compartment comprising an exposing domain, an  
inlet through which a volume of a liquid sample  
representing the analyte material can be  
introduced, and a flow system comprising at  
least a channel allowing at least a portion of  
the volume of the liquid sample to flow within  
the device,

20 introducing a volume of the liquid sample in  
the device through the inlet of the  
disposable device, passing at least a portion  
of the volume of the liquid sample through  
the flow system of the into the exposing  
domain of the sample compartment,

25 arranging the device in relation to detection  
device comprising detection means for  
quantitatively detecting spatial image data  
and processing means for processing the  
detected image presentation

detecting electromagnetic signals from the sample in  
the exposing domain of the device in the  
detection device forming, in the detection  
device, a spatial image representation of the  
exposing domain, and  
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processing the detected image presentation  
obtaining the assessment of the at least one  
parameter.

10 131. (withdrawn) A method according to claim 130,  
wherein one or more reaction components initially  
loaded in a compartment or flow channel part of the  
flow system of the disposable device is added to at  
least a portion of the volume of the liquid sample  
15 representing the analyte material.

132. (withdrawn) A method according to claim 131,  
wherein the reaction components comprise one or more  
chemicals in solid form.

20 133. (withdrawn) A method according to claim 132,  
wherein the reaction components comprise one or more  
chemicals in solid form in combination with one or more  
solubilizing agents aiding the solubilization of the  
25 chemicals in the liquid sample.

134. (withdrawn) A method according to claim 132,  
wherein at least one of the reaction components has  
been loaded in freeze-dried form.

30 135. (withdrawn) A method according to claim 130,  
wherein any longitudinal gradient present in the liquid

sample in the flow system is substantially reduced by passing the liquid sample through a part of a flow channel of the flow system of the device having a shape and/or size resulting in substantially reduction of 5 longitudinal gradients in liquids passing therethrough.

136. (withdrawn) A method according to claim 130, wherein the part of the flow channel has at least one 10 bend or obstruction resulting in substantially turbulent flow in the liquid passing the bend or obstruction.

137. (withdrawn) A method according to claim 130, wherein 15 the velocity of the flow into, within, or out of the device is regulated by means of one or more regulating means constituting part of the flow system, wherein the flow regulating means comprise means selected from stop valves, one way valves, and pressure and/or speed 20 reduction valves.

138. (withdrawn) A method according to claim 130, wherein one or more operations selected from the group 25 consisting of filtration, concentration and magnetic attraction is/are performed, the device comprising the means for performing such operation or operations.

139. (withdrawn) A method according to claim 130, wherein 30 the detection of the spatial image representation is performed by means of an array of active detection elements onto which array the spatial image presentation is exposed.

140. (withdrawn) A method according to claim 130, wherein the signal which is detected by detection device substantially originates from one or several types of molecules of types which bind to, are retained within, or interact with, the particles, such molecules being added to the sample before or during exposure of electromagnetic signals, the molecules being molecules giving rise to one or several of the following phenomena: attenuation of electromagnetic radiation, photoluminescence when illuminated with electromagnetic radiation, scatter of electromagnetic radiation, Raman scatter.

141. (withdrawn) A method according to claim 131, one or more reaction components initially loaded in a compartment or flow channel part of the flow system of the device is one or more nucleic acid dyes and/or one or more potentiometric membrane dyes.

142. (withdrawn) A method according to claim 141, wherein one or more nucleic acid dyes is/are selected from the group consisting of: phenanthridines (e.g. ethidium bromide CAS#: 1239-45-8, propidium iodide CAS#: 25535-16-4), acridine dyes (e.g. acridine orange CAS#: 65-61-2 ICAS#: 10127-02-3), cyanine dyes (e.g. TOTO<sup>TM</sup>-1 iodide CAS#: 143 413-84-7 -Molecular Probes, YOPRO<sup>TM</sup>-1 iodide CAS#: 152 068-09-2 -Molecular Probes), indoles and imidazoles (e.g. Hoechst 33258 CAS#: 023 491-45-4, Hoechst 33342 CAS#: 023 491-52-3, DAPI CAS#: 28718-90-3, DIPI (4',6-(diimidazolin-2-yl)-2-phenylindole)).

143. (withdrawn) A method according to claim 141, wherein the nucleic acid dye added is propidium iodide CAS#: 25535-16-4.

5 144. (withdrawn) A method according to claim 130, wherein particle being assessed is a result of one or several reaction(s) between one or more antibodies and one or more antigens.

10 145. (withdrawn) A method according to claim 130, wherein the assessment of particles is carried out substantially simultaneously with the determination of the amount and/or the level of any constituent in said sample material, the constituent being determined 15 being, e.g., one or several of: fat, protein, lactose, urea, citric acid, glucose, ketones, carbon dioxide, oxygen, pH, potassium, calcium, sodium.

20 146. (withdrawn) A method according to claim 145, wherein the determination of any chemical property is based on spectrophotometric measurement, the spectrophotometric measurement being, e.g., one or several of; mid-infrared attenuation, near-infrared attenuation, visible attenuation, ultra-violet attenuation, photoluminescence, raman scatter, nuclear 25 magnetic resonance.

30 147. (withdrawn) A method according to claim 130, wherein the interior of the sample compartment has an average thickness of between 20  $\mu\text{m}$  and 2000  $\mu\text{m}$ , preferably between 20  $\mu\text{m}$  and 1000  $\mu\text{m}$ , more preferably between 20  $\mu\text{m}$  and 200  $\mu\text{m}$ .

148. (withdrawn) A method according to claim 130,  
wherein sample compartment has dimensions, in a  
direction substantially parallel to an exposing window,  
5 in the range between 1 mm by 1 mm and 10 mm by 10 mm.

149. (withdrawn) A method according to claim 130,  
wherein the volume of the liquid sample from which  
electromagnetic radiation is exposed, is in the range  
10 between 0.01  $\mu$ l and 20  $\mu$ l, more preferably between 0.04  
 $\mu$ l and 4  $\mu$ l.

150. (withdrawn) A system for the assessment of at least  
one parameter of particles in a liquid analyte  
15 material, comprising a device comprising a sample  
compartment comprising an exposing domain, an inlet  
through which a volume of a liquid sample representing  
the analyte material can be introduced, and a flow  
system comprising at least a channel allowing at least  
20 a portion of the volume of the liquid sample to flow  
within the device,  
a detection device comprising detection means for  
quantitatively detecting spatial image data and  
processing means for processing the detected image  
25 presentation, the device and the detection device  
having means for arranging the device in relation to  
the detection device in a manner allowing  
electromagnetic signals from a sample in the exposing  
domain of the device to pass to the detection device  
30 and to form, in the detection device, a spatial image  
representation of the exposing domain.

151. (withdrawn) A system according to claim 150,  
wherein the flow system additionally comprises a  
compartment or a flow channel part in or from which at  
least part of one or more reaction components initially  
5 loaded in the compartment or flow channel part is added  
to at least a portion of the volume of the liquid  
sample representing the analyte material, preferably  
wherein at least one of the reaction components loaded  
into the compartment or flow channel is in solid form.

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152. (withdrawn) A system according to claim 151,  
wherein the reaction components comprise one or more  
chemicals in solid form in combination with one or more  
solubilizing agents aiding the solubilization of the  
15 chemicals in the liquid sample.

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153. (withdrawn) A system according to claim 150,  
wherein the part of the flow channel provides  
substantial laminar flow therethrough and/or comprises  
one or more mixing chambers.

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154. (withdrawn) A system according to claim 150,  
wherein at least a part of a flow channel of the device  
has such a shape and/or size that passage of the liquid  
sample through it will substantially reduce any radial  
gradient present in the liquid sample, the part of the  
flow channel having at least one bend or obstruction  
resulting in substantially turbulent flow in liquid  
passing the bend or obstruction.

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155. (withdrawn) A system according to claim 150,  
wherein the flow system comprises velocity regulating

means selected from stop valves, one way valves, and pressure and/or speed reduction valves.

156. (withdrawn) A system according to claim 150,  
5 wherein the device comprises means for performing one or more operations on the liquid sample, the operations being selected from the group consisting of filtration, concentration and magnetic attraction.

10 157. (withdrawn) A system according to claim 151, wherein one or more reaction components initially loaded in a compartment or flow channel part of the flow system of the device is one or more nucleic acid dyes and/or one or more potentiometric membrane dyes in  
15 an amount of 0.3-30  $\mu$ g per ml of the sample.

158. (withdrawn) A system according to claim 150, wherein the determination of a chemical property of the sample is based on spectrophotometric measurement, the spectrophotometric measurement being, e.g., one or several of; mid-infrared attenuation, near-infrared attenuation, visible attenuation, ultra-violet attenuation, photoluminescence, Raman scatter, nuclear magnetic resonance.

25 159. (withdrawn) A system according to claim 150, wherein the determination of any chemical property is based on potentiometric measurement, preferably by the use of ion selective electrode.

30 160. (withdrawn) A system according to claim 150, wherein the interior of the sample compartment has an

average thickness of between 20  $\mu\text{m}$  and 2000  $\mu\text{m}$ , preferably between 20  $\mu\text{m}$  and 1000  $\mu\text{m}$ , more preferably between 20  $\mu\text{m}$  and 200  $\mu\text{m}$ .

5 161. (withdrawn) A system according to claim 150, wherein sample compartment has dimensions, in a direction substantially parallel to an exposing window, in the range between 1 mm by 1 mm and 10 mm by 10 mm.

10 162. (withdrawn) A system according to claim 150, wherein the volume of the liquid sample from which electromagnetic radiation is exposed, is in the range between 0.01  $\mu\text{l}$  and 20  $\mu\text{l}$ , preferably between 0.04  $\mu\text{l}$  and 4  $\mu\text{l}$ .

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163. (currently amended) A device adapted to be used in a system for the assessment of at least one parameter of particles in a liquid analyte material, the a device comprising

20 - a sample compartment comprising an exposing domain, said exposing domain allowing electromagnetic signals from a sample in the exposing domain to pass to a detection device and to form, in the detection device, a spatial image representation of the exposing domain processable by processing means of the detection device,

25 - an inlet through which a volume of a liquid sample representing the analyte material can been introduced,

30 - a flow system comprising at least a channel allowing at least a portion of the volume of the liquid sample to flow within the device,

- and means for arranging the device in relation to the detection device, , which detection device comprises detection means for quantitatively detecting spatial image data and processing means for processing the detected image presentation in a manner allowing electromagnetic signals from a sample in the exposing domain of the device to pass to the detection device and to form, in the detection device, a spatial image representation of the exposing domain processable by the processing means of the detection device and means for disengaging the device from the detection device after the detection by the detection means,
- the device having no sample outlet.

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164. (currently amended) A device according to claim 163, wherein the flow system additionally comprises a compartment or a flow channel part in which or from which at least part of one or more reaction components initially loaded in the compartment or flow channel part is added to at least a portion of the volume of the liquid sample representing the analyte material.

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165. A device according to claim 164, wherein at least one of the reaction components is in freeze-dried form.

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166. (currently amended) A device according to claim 163, wherein the part of the flow channel provides substantial laminar flow therethrough and/or comprises one or more mixing chambers in the liquid sample.

167. (currently amended) A device according to claim 163, wherein the part of the flow channel has at least one bend or obstruction resulting in substantially turbulent flow in liquid passing the bend or 5 obstruction.

168. (currently amended) A device according to claim 163, wherein the flow system comprises one or more means for regulating the velocity of the flow into, 10 within, or out of the device, the velocity regulating means comprising means selected from the group consisting of: stop valves, one way valves, and pressure valves and/or speed reduction valves.

15 169. (currently amended) A device according to claim 163, ~~which~~ wherein the device comprises means for performing one or more operations on the liquid sample, the operations being selected from the group consisting of filtration, concentration and magnetic 20 attraction.

170. (currently amended) A device according to claim 163, containing one or more compartment(s) or domain which allows ~~on~~-spectrophotometric measurement for the 25 determination of any chemical property, the spectrophotometric measurement ~~e.g., one or several~~ ~~ef,~~ being selected from the group consisting of: mid-infrared attenuation, near-infrared attenuation, visible attenuation, ultra-violet attenuation, 30 photoluminescence, raman scatter, and nuclear magnetic resonance.

171. (currently amended) A device according to claim  
163, wherein the interior of the sample compartment  
has an average thickness depth of between 20  $\mu\text{m}$  and  
2000  $\mu\text{m}$ , ~~preferably between 20  $\mu\text{m}$  and 1000  $\mu\text{m}$ , more~~  
5 ~~preferably between 20  $\mu\text{m}$  and 200  $\mu\text{m}$ .~~

172. (currently amended) A device according to claim  
163, wherein sample compartment has dimensions, in a  
~~direction substantially plane~~ parallel to an exposing  
10 window, in the range between 1 mm by 1 mm and 10 mm by  
10 mm.

173. (currently amended) A device according to claim  
163, wherein the volume of the sample compartment from  
15 which electromagnetic radiation is exposed, is in the  
range between 0.01  $\mu\text{l}$  and 20  $\mu\text{l}$ , ~~more preferably in~~  
~~the range between 0.04  $\mu\text{l}$  and 4  $\mu\text{l}$ .~~

174. (previously presented) A device according to  
20 claim 163, wherein the flow system comprises one or  
more mixing chambers.

175. (previously presented) A device according to  
claim 163, wherein the interior of the sample  
25 compartment has an average depth of between 20  $\mu\text{m}$  and  
1000  $\mu\text{m}$ .

176. (previously presented) A device according to  
claim 163, wherein the interior of the sample  
30 compartment has an average depth of between 20  $\mu\text{m}$  and  
200  $\mu\text{m}$ .

177. (previously presented) A device according to claim 163, wherein the volume of the sample compartment from which electromagnetic radiation is exposed, is in the range between 0.04  $\mu$ l and 4  $\mu$ l.

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178. (previously presented) A device according to claim 163, wherein the device comprises a propelling means.

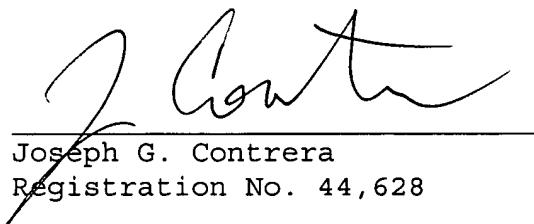
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If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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Respectfully submitted,

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